Module 18
Condemned and Inedible Products

Objectives

After completing the module on Condemned and Inedible Meat Products, the trainee will be able, without the aid of references, to:

1. Recognize factual statements about the definitions of condemned and inedible meat products as defined by Regulations.

2. Identify three general categories of condemned and inedible product.

3. List the five principles of controlling condemned and inedible products and describe how each principle may be accomplished.

4. List inedible products that need not normally be identified.

5. List three methods by which condemned materials are kept under security (custody).

6. Identify those requirements applicable to containers for condemned product and those applicable to containers for inedible product.

7. Identify acceptable methods of destroying condemned product to prevent its use as human food.

8. Describe three ways that carcasses that have died or that are condemned on antemortem may be disposed of (destroyed) to prevent their use in human food.

9. Outline the requirements regarding the personal and work habits of plant personnel who handle condemned product.

10. Provide the requirement for storage of condemned product at an official establishment.

11. Given a list of compounds, be able to identify those denaturants approved for use on condemned product and those approved for use on inedible or condemned product that is eligible for use in animal food production.

12. List the requirements for inspection and plant procedures, as outlined in the Regulations and Manual, for the handling of:

    a. Slunks (stillborn or unborn calves)

    b. Fetal blood for research

    c. Specimens of inedible or condemned product for research or educational purposes

    d. Bile

13. Describe acceptable methods for identifying, controlling, and disposing of each of the following:

    a. Inedible product

    b. Condemned product eligible for animal food

    c. Condemned product NOT eligible for animal food

    d. Animals dead on arrival or dead on premises

14. Identify requirements for receiving, handling, or shipping inedible fats.

15. Describe the type of authorization required for an establishment that ships condemned or inedible materials off the official premises.

16. Identify the documentation necessary to record and report product condemned, tanked, or otherwise destroyed.

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DEFINITIONS

The terms condemned and inedible have specific and distinct definitions as applied within FSIS. Condemned product is product that is normally edible, but following inspection is found to be diseased or otherwise adulterated. It is not fit for human consumption and is designated "U S INS'P and CONDEMNED."

Inedible product is any product that is adulterated, uninspected, or not intended for use as human food. The term inedible has been used traditionally within FSIS to refer to product that by its nature is not handled as human food. Examples include bones, uncleaned intestines, lungs, reproductive organs, feet etc. If inedible product is diseased or has the appearance of edible product, it must be handled as condemned.

Both condemned and inedible products are not fit for human consumption. Due to the edible appearance of condemned product, its control is most crucial and the requirements found in the regulations are very specific. Edible product may have a similar appearance to condemned and some inedible product, yet there is a great difference in economic value. Obviously, edible product is worth considerably more money. This fact may lead to a temptation by some in the meat industry to divert condemned and inedible product into edible channels for increased profit. Meat processing technology lends itself to concealment of these products. For example, if diseased, spoiled, or adulterated product were to be mixed with wholesome product and chopped, ground, seasoned, and cooked, it would be nearly impossible to detect its presence. Because of the considerable economic incentive to utilize condemned or inedible product and the ease with which concealment of such product can be accomplished, the Agency places a special emphasis on the control of condemned and inedible product.

PRINCIPLES OF CONTROL

FSIS control of condemned and inedible product involves five principles:

-Identification
-Custody
-Separation
-Destruction
-Documentation

FSIS personnel must monitor plant-handling procedures of condemned and inedible product to assure that it is properly identified, maintained in FSIS custody, kept separate

from edible product and properly destroyed. Additionally, all actions taken must be appropriately documented.

IDENTIFICATION

As has been discussed, condemned products may look edible. For this reason they must be properly identified. The Regulations require that each condemned carcass, part, or visceral organ be marked with the "U S INS'P and CONDEMNED" brand. If the condemned product cannot be branded because of its size or texture, it shall be placed in a container identified with the words "U S CONDEMNED" in letters not less than two inches high. Condemned product is to be disposed of by tanking.

An exception in the Regulations allows the salvage of certain classes of condemned product for the production of pet animal food. One example is beef livers condemned for human consumption but allowed for use in pet food. Pet animal food production will be covered in detail later; for now it is important to concentrate on the proper identification of these products to prevent them from accidentally being diverted to human food channels. Many large beef plants today operate at very fast line speeds. This requires the inspector to make accurate decisions in split seconds. The system to identify beef livers condemned to tankage vs. beef livers condemned for human consumption but allowed for animal food must be consistent. With multiple FSIS inspectors and relief personnel performing inspection duties in a plant, a uniform means of identification is critical to ensure plant employees salvage appropriate product. For example, two condemned brand marks may indicate a liver to be tanked while a single condemned brand mark may be used to identify a liver condemned for edible use but allowed for pet food use. Every inspector working in an establishment that salvages product for use in pet food manufacture must become thoroughly familiar with the method of identification utilized in his/her plant.

CUSTODY

The Wholesome Meat act requires that the inspector be able to certify that all condemned product is properly destroyed. To assure this, security of condemned product is essential. The regulations state that all condemned product must be kept in custody (security) of an FO employee until it is destroyed for human purposes on or before the close of the day on which it was condemned. Destruction can be accomplished by incineration, rendering (tanking), or denaturing. Custody is direct supervision or security. This means that the condemned product must either be within sight of an inspector at all times or be placed in a secure container or room equipped with an official lock or seal. Therefore it is not permissible for inspection personnel to allow plant personnel to leave undenatured condemned or inedible product on the kill floor during lunch or other break periods. Once condemned and inedible product is destroyed, or properly denatured, custody is no longer required.

Wholesome stomachs, intestines, bones, feet, etc. may be saved for edible (human) food at some establishments. Others may save these as inedible product for animal food production. This is acceptable provided they are properly identified. If not used for either purpose, the product doesn't require any special security if kept separate from edible product. If shipped off- premises for rendering, this product doesn't require denaturing as long as the plant's handling of the product results in an inedible appearance. When it does not, the product should be identified with a denaturant such as powdered charcoal. Hair, hide, horns, and hooves are products considered naturally inedible. It is not necessary to require special identification or denaturing, but they must be kept separate from edible product.

SEPARATION

Condemned and inedible products must be kept separate from edible products. A physical separation of edible and inedible facilities must be maintained and odors from edible areas must be prevented from entering edible product areas. Entry of insects and rodents into any product area is prohibited and any potential rodent harborage or food source should be eliminated.

If the plant doesn't maintain a separation of product, equipment, and people between the edible and inedible areas, cross-contamination is inevitable. Contamination of edible products with materials from inedible and condemned product has potentially grave public health consequences. This is why, besides separation, proper attention to sanitation is a must. Inedible containers brought into edible departments must be watertight, acceptably clean, and properly identified. There are two types of inedible product containers. Containers for product condemned to tankage are marked "U S INS'P CONDEMNED" in letters not less than two inches high. Those for product condemned for human use (inedible) but eligible for pet animal food are identified as "INEDIBLE."

Ideally, in order to prevent the transfer of contaminants form inedible product to edible product, personnel working in the inedible department should be restricted form entering areas where edible product is handled. In small plants with limited personnel this may not be possible. A plant employee will have several responsibilities, which may include both edible and inedible departments. In these instances the inspector should enforce strict rules requiring good personnel hygiene. This includes cleaning or changing of work clothing, boots, aprons, and equipment prior to going from inedible to edible departments.

Carcasses of animals found dead or animals condemned on antemortem inspection are not to be brought into or through an edible product area. Dead animals, except those that die en- route and are received with other livestock to be slaughtered, may not be brought onto the premises without prior approval of the circuit supervisor. Depending on the plant facilities, antemortem condemned animals may be skinned and slashed or slashed through the skin into major body muscles and the body cavities followed by the

application of denaturant to all parts of the carcass. Many states, however, have regulations prohibiting the transport of opened carcasses, so an alternate method is approved. The denaturant may be injected into major muscles and cavities. This method is approved for carcasses of animals condemned on antemortem inspection but not for carcasses condemned on postmortem inspection.

Bile historically has been regarded as inedible and when contamination of edible product occurs it must be removed before completion of inspection by FSIS personnel. There are provisions allowing that inedible bile can be saved for manufacturing uses and stored in edible product areas. In recent times, salvage of edible bile for condiment purposes has been permitted under some FSIS District policy provisions. Where it is allowed, bile must be segregated, handled, and labeled as an edible product.

DESTRUCTION

There are three basic methods approved for making condemned and inedible meat products incapable of being used as human food. They are:

-Rendering
-Incineration
-Application of Approved Denaturants

Inedible rendering is a process by which materials are heated sufficiently to destroy them for human food. When the plant has its own facilities to perform the rendering process this is termed " on-premises" rendering. Many plants do not have such facilities. Instead they may ship condemned and inedible materials to an outside rendering facility. This is referred to as "off-premise" rendering.

Rendering under custody was a common practice in the past. Condemned product was placed in a rendering tank under the supervision of an inspector who would then seal the tank. Once the contents were heated adequately to destroy them for human purposes, the inspector would then remove the seal, thereby releasing it from his/her custody. This method is rarely, if ever, used today.

Plants that perform their own "on-premises" rendering today generally utilize hashers and/or pre-breakers as a pre-tanking preparation of condemned product. This gives an inedible character and appearance to the product. For this reason, custody is not necessary once the material has been hashed. In addition, there is no requirement to use denaturant on this product to be rendered on-premises. However, prior to hashing, custody of the product must be maintained. This includes all equipment prior to the hasher. For example, if an auger is used to convey condemned material to the hasher, it must be covered and sealed or be located in a secured room.

Off-premises rendering is an entirely different story. Whenever condemned materials are to be shipped to another site, they must be properly denatured. This is true whether the material has been hashed or not.

The three basic types of rendering systems are wet, dry, and continuous. They all employ the application of heat to condemned product, which results in two end products- tankage and inedible grease. The tankage (a dry residue) is used for livestock feeds or fertilizer. Inedible grease is often used in industrial production of plastics, explosives, and soaps. There are no regulatory requirements from FSIS, APHIS, or FDA regarding the time and temperature of the heating process. Generally, however, a temperature of 240-260 degrees F is used throughout the industry.

In both wet and dry rendering, materials are processed in a batch system. Wet rendering utilizes steam applied directly to the product. The tank becomes a pressure cooker and cooks the product through a moist heat process. In dry rendering, a steam jacket around the outside of the tank heats the material without directly contacting it. This dry heating process is facilitated by the product being either tumbled or agitated during cooking. More modern plants use the continuous rendering process. Instead of cooking each batch of product as is done in the wet and dry processes, product flows continuously through various pieces of complex equipment and emerges at the other end as grease and tankage. All rendering systems produce strong and offensive odors and should be equipped with vapor condensers. A water shower of vapors from the tank is carried to the sewer and an odor nuisance is then avoided.

Inedible fat (grease) from the rendering process must be properly identified by marking shipping containers with "INEDIBLE" in four-inch letters on trucks or railroad tank cars and with two- inch letters on smaller shipping containers. If the inedible fat has the appearance of an edible product, it may be shipped under permit with the shipping container labeled "TECHNICAL ANIMAL FAT NOT INTENDED FOR HUMAN CONSUMPTION" (same letter size and vehicle requirements). Otherwise, the appearance of the inedible fat must be altered by the addition of a low-grade offal such as stomachs and intestines or by the addition of other denaturants.

If the plant doesn't have inedible tanking facilities, all condemned product must be destroyed (under inspector custody) by incineration or by the application of an approved denaturant. A listing of acceptable denaturing agents may be found in two sources: the Regulations and the "List of Proprietary substances and Nonfood Compounds." Before an approved denaturing agent is applied, the product must be freely slashed so that pieces are less than 4" in diameter. This allows the denaturant to contact all parts of the product. Denaturants change the color and/or odor of products sufficiently to destroy them for food purposes.

In addition to any approved denaturant compounds found in the "List of Proprietary substances and Nonfood Compounds," there are three types of denaturants approved for use on product condemned to tankage. They are:

-Crude carbolic acid
-Cresylic disinfectants
-A formula consisting of FD&C green color No. 3, oil of citronella, detergent, and water

A different group of denaturants are used on inedible product condemned for human food but salvaged for animal food. This is because the above agents would make the product unfit for even animal food. Animal food denaturants include:

-FD&C green color No. 3
-FD&C blue color No. 1
-FD&C blue color No. 2
-Powdered Charcoal
-Any compound approved for such use in the "List of Proprietary substances and Nonfood Compounds" book

DOCUMENTATION

Inspection actions regarding the control of condemned products must be properly documented. On antemortem, actions might be recorded on FSIS Form 6150-1 (Identification Tag-Antemortem) or FSIS Form 6502 (MP 35) (US Reject/Retain Tag). Spoiled or contaminated meat would be reported on FSIS Form 7010-4 (Processed Products Condemned as Official Establishments). FSIS Form 6750-1 (Daily Tanking Report) is a report (used at the option of the area supervisor) to document the control of condemned products in slaughter plants. In all establishments that ship condemned of inedible product, a letter of approval from appropriate animal disease control officials (local, state, or federal) must be on file in the inspector's office. Separate letters are required if the shipments involve more than one state.

Specimens of condemned or inedible materials for educational, research, or other nonfood purposes may be released from the plant under a permit issued by the IIC. The application is FSIS Form 6700-2 (MP 403-10) (Application and Permit to Obtain Specimens from Official Establishments). If institutions or individuals wish to obtain specimens on an ongoing basis, the permit must be renewed annually.

This form is also the permit to ship undenatured lungs for pharmaceutical or animal food use. Undenatured lungs for pharmaceutical purposes must be labeled "Inedible [Species] Lungs - For Pharmaceutical Use Only." If an establishment wishes to ship undenatured lungs for animal food, several requirements must be met. Permission must be obtained in writing from the district manager. The lungs must be shipped directly to an animal food manufacturer, zoo, mink farm, or storage warehouse. Shipping containers must be labeled "[Species Lungs - Not Intended for Human Food"

and return copies of the shipping certificate must indicate to the inspector that the shipment reached its destination.

Shipment of undenatured condemned carcasses eligible for use as animal food may be approved. This requires a special permit issued by the District Manager. This product must be shipped directly to a manufacturer of inedible products. Additionally, there are special labeling and container sealing requirements.

ANIMAL FOOD PRODUCTION

Previously, a number of references have been made to product that an establishment may choose to salvage for use in animal food (pet food) production. This can involve three separate and distinct categories. They are edible product, inedible product, and condemned product eligible for pet food manufacture.

Some plants may not elect to save certain products for human food but salvage them for animal food instead. For example, they may not have a market for bovine paunches (tripe) for human consumption. Additionally, the extra personnel and equipment needed to properly clean the product and maintain it in an edible state may not be worth their while. However, by saving paunches for animal food they can still generate some income from this product. This may be true of other non-condemned products, such as healthy lungs, spleens, kidneys, or udders. While absolute custody is not required during normal operations, these products must be properly handled, and denatured while an inspector is on duty. If they are held overnight, they must be secured with a government lock or seal.

Inedible products such as bones, stomachs, uncleaned intestines, female reproductive organs, feet, etc., do not require any special security while in the plant as long as they are properly segregated from edible product. If their handling results in an INEDIBLE APPEARANCE, denaturing is not required, unless local needs dictate. In no instance should the salvage of product for animal food create a sanitation problem in edible areas or interfere with normal inspection procedures. Recall that under very specific restrictions and the approval of the district manager, undenatured lungs may be shipped for use in pet food manufacture.

The third category of animal food product is that product condemned for human consumption but eligible for use in pet food. Beef livers condemned for certain conditions fall under this category. Only livers condemned for causes not associated with systemic diseases are eligible for salvage as animal food. These include:

- Telangiectasis ("telang")
- Angioma
- Distoma (fluke infestation)
- "Sawdust"
- Cirrhosis

- Carotenosis
- Contamination
- Benign abscesses (after removal of the abscess material)
- Parasites other than hydatid infestations

Livers condemned because of hydatid cysts and extensive abscesses are not eligible for animal food and must be condemned to tankage.

Carcasses condemned for certain conditions may be salvaged for animal food with permission of the circuit supervisor. These conditions are:

- Anasarca
- Epithelioma (after removal of all neoplastic tissue)
- Emaciation
- Eosinophilic myositis
- Immaturity
- Nonseptic bruises and injuries
- Sarcosporidiosis

Slunks (stillborn or unborn calves) are considered condemned but eligible for use as animal food. Slunks must be maintained under absolute custody until properly denatured or properly destroyed. However, they may not be saved for animal food if derived from condemned carcasses. Note: Fetal blood may be saved for research purposes. It may be collected on the kill floor provided it is under the inspector's direct supervision and does not cause a nuisance, product contamination, or excessive inspection coverage. Fetal blood must be handled and labeled as an inedible product.

Carcasses Condemned For Any Other Reason May Not Be Saved For Animal Food.

Remember, all condemned products, including those eligible for animal food, must be kept in custody until properly destroyed for human food purposes. As has been mentioned previously, product salvaged for animal food use must be properly identified at all times and denatured with a denaturant approved for such purposes.

The control of condemned and inedible product is essential to the mission of the Agency and only with comprehensive uniform application of our actions can this control be affective.

FSIS personnel are responsible for *identification* of condemned and inedible products in official establishments. We are to maintain it in our *custody* until it is *destroyed* for edible purposes. We are to assure its *separation* from edible product and to provide *documentation* of all of these product actions.

Module 18
Condemned and Inedible Products

Supplement

Indicate true statements by placing an X in the appropriate blanks.

1. The Agency places a special emphasis on the control of condemned and/or inedible product prevent

   _____ preparation of ground beef.

   _____ concealment of condemned or inedible product in processed products.

   _____ the diversion of inedible products into edible channels.

   _____ the mixing of adulterated and wholesome product.

   _____ the removal of condemned brands from condemned carcasses.

   _____ cooking of wholesome product.

2. According to the principles of control, condemned and inedible product must be:

   _____ physically separate from edible product.

   _____ salvaged for animal food.

   _____ researched under a NAS grant.

   _____ properly identified.

   _____ approved as wholesome.

   _____ kept in custody of a plant employee.

   _____ destroyed for human food purposes

   _____ destroyed and documented on Form AD-202.

3. Of the following conditions in which livers are condemned for edible purposes, which would you allow the plant to save for pet food production?

   _____ Sawdust

   _____ Hydatid cysts

   _____ Extensive abscesses

   _____ Liver from an animal carcass condemned for pneumonia

   _____ Carotenosis

   _____ Benign abscess (after removal of the abscess material)

   _____ Distoma (fluke infestation)

   _____ Telang

4. List the five principles of control in regard to condemned/inedible product.

   a. _____

   b. _____

   c. _____

   d. _____

   e. _____

5. There are three means by which inspection personnel may have condemned/inedible product in their custody. Secured by a USDA lock or seal are two of them. What is the third?

   _____

6. A plant is saving product for animal food manufacture. Included are spleens, tripe, and intestines. Since these products could have potentially been saved for edible purposes, there is no need to identify them as inedible or to have a denaturant applied to them.

_____ True _____ False

7. Which of the following substances are acceptable for use as denaturants for meat carcasses and parts condemned to tankage?

_____ Crude carbolic acid

_____ Kerosene

_____ Charcoal

_____ FD&C Blue No. 2

_____ Compounds listed in the "List of Proprietary Substances and Nonfood Compounds" with code letter 4B

_____ Cresylic disinfectant

_____ Phenolic disinfectants

_____ Used crankcase oil

8. Which of the following substances are acceptable for use as denaturants for meat carcasses and parts condemned for edible purposes, but eligible for animal food?

_____ Kerosene

_____ Compounds listed in the "List of Proprietary Substances and Nonfood

_____ FD&C Blue No. 2

_____ FD&C Green No. 3

_____ A formula containing FD&C Green No. 3, oil of citronella, liquid detergent, and water

_____ Finely powdered charcoal

_____ FD&C Blue No. 1

_____ FD&C Red No. 3

9. Define "U S and INS"P and CONDEMNED" as stated in the Regulations.

10. Define "INEDIBLE" as stated in the Regulations.

11. An animal dies in the pen before slaughter. You correctly fill out an FSIS Form 6150-1 and have the plant place a red ”U.S. Condemned" tag in its ear. The plant has no on-premises rendering facility. The plant may skin and freely slash the carcass or slash through the skin into major muscles and body cavities and apply denaturant to all portions of the carcass. Describe the other method that may be employed to assure that the carcass is destroyed for edible purposes.

12. Could the plant apply a charcoal denaturant to the above animal and utilize it for animal food?

13. The plant manager informs you that the local school has called and would like to obtain 25 cattle eyes for use in their biology laboratory. Is this permissible?

Is there any documentation required to do this and if so, what?

14. You find a 10-gallon container of dark green liquid in the corner of the hog carcass cooler. When you ask the foreman about it, she says that they are saving inedible bile.

a. Is it permissible for the plant to save bile from condemned, inedible, and edible livers?

b. Is this location acceptable? Any restrictions?

c. Should the container be identified and if so, how?

d. Site the Manual/Regulation reference for the above answers.

15. List the types of authorization or documentation required for the following situations (if a form is required, give the official form number and form title):

    a. The plant wishes to save condemned carcasses condemned for certain conditions (anasarca, epithelioma, immaturity, nonspetic bruises and injuries, eosinophilic myositis, emaciation, and sarcosporidiosis) for animal food. Who must approve this practice?

    b. Form used to report condemned on reinspection by the inspector.

    c. Requirement if the plant wishes to ship inedible/condemned meat products from the plant to an off-premises rendering facility.

    d. Form used to document the control of condemned products in slaughtering plants (use is optional).

       Who determines whether the above form is to be used?

    e. Form used for the release of specimens from the plant.

f. Form used as a permit to ship undenatured lungs for pharmaceutical or animal food use.

   Who must approve this practice?

   Any other requirements to be met?